

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) An implantable device for delivering cardiac function therapy to a patient, comprising:

a plurality of pacing channels for delivering pacing pulses to multiple ventricular sites;
a parasympathetic stimulation channel for stimulating parasympathetic nerves innervating the heart;

a sensor for measuring cardiac output;

an exertion level sensor for measuring the patient's exertion level;

a controller for controlling the delivery of pacing pulses to the multiple ventricular sites in accordance with a programmed pacing mode;

wherein the controller is programmed to deliver multi-site ventricular pacing therapy in conjunction with parasympathetic stimulation and wherein the controller is further programmed to deliver the multi-site ventricular pacing therapy with a pacing pulse output sequence that pre-excites at least one myocardial region relative to other regions for reducing ventricular wall stress;

wherein the controller is further programmed to deliver the multi-site ventricular pacing in accordance with a demand pacing mode that counteracts slowing of the heart rate by the parasympathetic stimulation so that no slowing of the heart rate occurs ~~prevents slowing of the heart rate below a specified minimum value due to the parasympathetic stimulation~~; and,

wherein the controller is programmed to compute a function that maps exertion levels to minimum cardiac output values considered to be adequate for a particular exertion level and is further programmed to cease the delivery of parasympathetic stimulation if a presently measured cardiac output is below the minimum cardiac output indicated as adequate by the computed function.

2. (Cancelled)

3. (Previously Presented) The device of claim 1 wherein the cardiac output sensor is a trans-thoracic impedance measuring circuit.

4. (Previously Presented) The device of claim 1 wherein the controller is programmed to deliver parasympathetic stimulation only when cardiac output is above a specified limit value.

5. (Previously Presented) The device of claim 1 wherein the controller is programmed to modulate the delivery of parasympathetic stimulation in accordance with the measured exertion level.

6. (Original) The device of claim 5 wherein the controller is programmed to deliver parasympathetic stimulation only when the measured exertion level is below a specified limit value.

7. (Cancelled)

8. (Previously Presented) The device of claim 1 wherein the controller is programmed to compute the function that maps exertion levels to minimum cardiac output values considered to be adequate for a particular exertion level using a look-up table.

9. (Original) The device of claim 5 wherein the exertion level sensor is a minute ventilation sensor.

10. (Original) The device of claim 5 wherein the exertion level sensor is an accelerometer.

11. (Currently Amended) A method for operating an implantable cardiac device in order to deliver therapy to a patient, comprising:

stimulating parasympathetic nerves innervating the heart in order to reduce ventricular wall stress;

delivering multi-site ventricular pacing therapy with a pacing pulse output sequence that pre-excites at least one myocardial region relative to other regions;

delivering pacing pulses to multiple ventricular sites in accordance with a demand pacing mode that counteracts slowing of the heart rate by the parasympathetic stimulation so that no slowing of the heart rate occurs ~~prevents slowing of the heart rate below a specified minimum value due to the parasympathetic stimulation;~~

measuring cardiac output;

measuring the patient's exertion level; and,

computing a function that maps exertion levels to minimum cardiac output values considered to be adequate for a particular exertion level and ceasing the delivery of parasympathetic stimulation if a presently measured cardiac output is below the minimum cardiac output indicated as adequate by the function.

12. (Cancelled)

13. (Previously Presented) The method of claim 11 further comprising measuring cardiac output sensor by measuring trans-thoracic impedance.

14. (Previously Presented) The method of claim 11 further comprising delivering parasympathetic stimulation only when cardiac output is above a specified limit value.

15. (Previously Presented) The method of claim 11 further comprising modulating the delivery of parasympathetic stimulation in accordance with the measured exertion level.

16. (Original) The method of claim 15 further comprising delivering parasympathetic stimulation only when the measured exertion level is below a specified limit value.

17. (Cancelled)

18. (Previously Presented) The method of claim 11 further comprising computing the function that maps exertion levels to minimum cardiac output values considered to be adequate for a particular exertion level using a look-up table.

19. (Original) The method of claim 15 further comprising measuring the exertion level by measuring minute ventilation.

20. (Original) The method of claim 15 further comprising measuring the exertion level by measuring body acceleration.

21. (Withdrawn) A monitoring device that monitors a patient, comprising:
at least one lead having an electrode, positioned proximate a location within a body of the patient and adapted to sense cardiac electrical activity; and
a control system coupled to the at least one lead to receive a signal representative of the cardiac electrical activity.

22. (Withdrawn) The monitoring device of claim 21, wherein the at least one lead is positioned proximate a location selected from one of a carotid artery and a carotid sinus.

23. (Withdrawn) The monitoring device of claim 21, wherein the control system is adapted to generate an electrocardiogram based on the cardiac electrical activity sensed by the at least one lead.

24. (Withdrawn) The monitoring device of claim 23, wherein the control system is further adapted to store the electrocardiogram.

25. (Withdrawn) A baroreflex activation system, comprising:
at least one lead having an electrode at a distal end, positioned proximate a location within the body of a patient and adapted to sense cardiac electrical activity;

a control system coupled to the at least one lead and to receive a signal representative of the cardiac electrical activity, and to deliver a baroreflex therapy through the at least one lead.

26. (Withdrawn) The baroreflex activation system of claim 25, wherein the baroreflex therapy is delivered in response to the cardiac electrical activity sensed by the at least one lead.

27. (Withdrawn) The baroreflex activation system of claim 25, wherein the at least one lead is positioned proximate a baroreflex site selected from one of a carotid artery and a carotid sinus.

28. (Withdrawn) The baroreflex activation system of claim 25, wherein the control system is adapted to generate an electrocardiogram based on the sensed cardiac electrical activity.

29. (Withdrawn) A method of monitoring cardiac activity and applying a baroreflex therapy for a patient, comprising:

implanting a baroreflex activation system within a body of the patient, the baroreflex activation device including a control system and at least one electrode, the at least one electrode adapted to deliver a signal and to sense cardiac electrical activity;

positioning the at least one electrode at a location within the body of a patient;

causing the baroreflex activation system to sense cardiac electrical activity via the at least one electrode; and

causing the baroreflex activation system to deliver a baroreflex therapy.

30. (Withdrawn) The method of claim 29, wherein the baroreflex therapy delivered by the baroreflex activation system is modulated in response to the sensed cardiac electrical activity.

31. (Withdrawn) The method of claim 30, wherein the control system generates an electrocardiogram based on the sensed electrical cardiac activity by the at least one electrode.

32. (Withdrawn) The method of claim 31, wherein the at least one electrode is positioned proximate a baroreflex site selected from one of a carotid artery and a carotid sinus.

33. (Withdrawn) A method of monitoring cardiac activity for a patient, comprising:
providing at least one lead having an electrode adapted to sense a cardiac parameter;
providing a control system adapted to be coupled to the at least one lead to receive signals from the at least one lead representative of the cardiac parameter; and
providing instructions to position the at least one lead proximate a first location within a body of the patient.
34. (Withdrawn) The method of claim 33, wherein the control system is adapted to generate an electrocardiogram based on the sensed cardiac electrical activity.
35. (Withdrawn) The method of claim 34, wherein providing instructions to position the at least one lead comprises providing instructions to position the at least one lead proximate a baroreflex site selected from one of a carotid artery and a carotid sinus.